THE DENTAL PRACTITIONER

monthly journal for the Practitioner and his Staff

VOL. I, NO. 9 MAY, 1951

Incorporating the Official Supplement of
The Dental Laboratories Section of the Surgical Instrument Manufacturers' Association

CONTENTS

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THE DENTAL PRACTITIONER

A Monthly Journal for the Practitioner and his Staff

(Incorporating the Proceedings of the British Society of Periodontology)

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VOL. I, No. 9 — MAY, 1951

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Vol. I, No. 9 May, 1951

EDITORIAL

A PERSONAL MESSAGE

EDITORIALS are, of course, intended to be personal messages to you, our readers, and as the number who write to us continues to grow so we appreciate this fact more and more. This journal was launched primarily because we felt that there was a definite need and desire in the Profession for a publication of this type, one which would be equally well received and enjoyed by all branches of our art.

As the months have gone by we have gained considerable strength and virility, bringing into our ranks many eminent people and two important societies, one embracing periodontology and the other prosthetics. We are proud both of these achievements and of our association with these personalities, and our circulation increases monthly as a result of the excellence of the articles submitted to us for publication and our policy of encouraging both surgeon and technician to read the same journal and to help one another. A happy marriage between these two members of our art would seem to be essential, and divorce chaotic! If we help to strengthen the links uniting the marriage then surely we can be proud of a job well done.

We still feel that there are many surgeons and technicians alike, who, if aware of the policy of this publication, would be anxious to become regular subscribers. In future, therefore we shall be inserting a "tear-out" order form in every copy and we hope that you will help by mentioning this publication and passing on the order form to a colleague who is sufficiently keen on his art and who wishes to keep *au fait* with all that is new and interesting in it.

If we now receive a flood of new subscribers we shall know two facts: (1) that this really is a very popular journal; and (2) that many of you even read the Editorial! If there is no sudden increase in the flow, then we shall continue to believe that we publish a good journal, but must reluctantly conclude that very few of you have troubled to read this!

THIS ISSUE

The present number contains articles from the staff of the National Dental Hospital, who responded so generously to the invitation issued to them that it was impossible for us to publish all the articles in the April issue. In this number, too, is the first part of an article on "Visual Aids" by Dr. Mandiwall, a subject of very great interest. Other articles and many of the usual features go we hope to make this at least the equal of any of the earlier numbers.

ÆSTHETICS AND THE USE OF CLEAR ACRYLIC RESIN TO SIMULATE INTERDENTAL SPACES IN A DENTAL PROSTHESIS

By **A. E. EVERETT**, L.D.S. R.C.S. Eng.

Prosthetist, National Dental Hospital

THE introduction into prosthetic dentistry of acrylic resin as a denture base and tooth material has greatly increased the possibilities of achieving an æsthetic result approaching perfection in full and partial denture construction.

Æsthetics cannot be regarded as an entirely separate problem, and may be influenced by the other aspects of the reconstruction, including occlusal planes, all aspects of the bite and

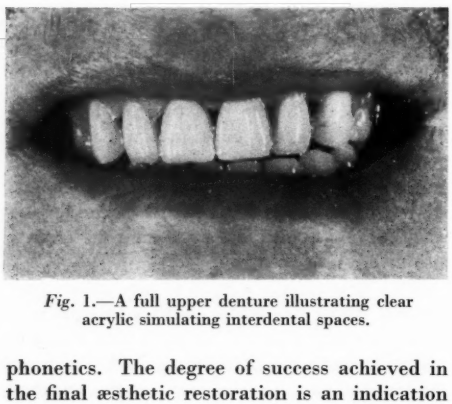


Fig. 1.—A full upper denture illustrating clear acrylic simulating interdental spaces.

phonetics. The degree of success achieved in the final æsthetic restoration is an indication of the dentist's and the technician's artistic ability and powers of observation. With careful cultivation of these, very pleasing æsthetic results may be achieved.

It is necessary to choose a type of tooth of suitable proportions in harmony with the facial outlines and with the arch, whether predominantly square, ovoid, or tapering, but it is often difficult to decide into which of these categories, or their subdivisions, the case can be placed. It has been observed, however, that a particular type of face does not always have the corresponding type of tooth, and that perhaps a tapering type may have square teeth without undue loss of harmony. It is possible, by too close a harmony and blend, to overemphasize a characteristic which would be better for a certain amount of mitigation and softening. Pre-extraction records, wherever possible, are most helpful.

The teeth must be set up, angled to appear implanted in the alveolar ridge, and with a suitable degree and type of irregularity, bearing in mind such factors as arch form, the degree of restoration and contouring required and the shape of the lips; phonetics, and tongue space, free or balanced articulation, interproximal wear and the effect of overbite and overjet. With regard to the last two factors, it is likely that an instanding lower incisor will tend to over-erupt, being less exposed to incising action, and that an outstanding lower incisor, playing a greater part in incision, will be shorter than its fellows and bevelled; and the shape of the incisal margins will further be influenced by tooth inclination and rotation. Similarly, an outstanding upper incisor may be a little longer, and an instanding perhaps shorter.

The selection of a tooth of suitable colour involves the study of brilliance, hue, saturation, and translucency. The natural effect may be greatly improved by staining and characterization and the insertion of gold fillings and synthetic type fillings, together with the provision of surface markings. In some cases, perhaps, a crown may be simulated. Suitable tinting, contouring, and stippling of the labial and buccal surfaces, and the proper shaping of the gingival margins, is also required.

It will be seen, then, that in attempting to achieve a perfect æsthetic result there are a great number of factors which must be considered, and which tend to be confusing.

By the use of clear acrylic to simulate the interdental spaces (*Fig.* 1), an illusion that the

teeth are actually "socketed" or implanted can be created, and for this reason, at normal talking distance, it may be difficult to believe that the case under scrutiny is other than a natural dentition, even though there may be slight imperfections and lack of harmony, which without this further device would reveal artificiality. With advancing age and

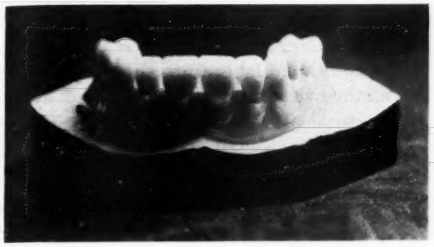


Fig. 2.—A denture illuminated from the palate, to show the form of the clear acrylic triangles.

gingival recession, the interdental spaces tend to become more pronounced, and the exact degree of recession required can be simulated in the artificial restoration without creating actual spaces, which would often collect stain and debris.

The clear acrylic material is confined exactly to the interdental spaces between the incisors, canines, and perhaps the premolars, and is extended palatally or lingually to these teeth, taking, in the interstices, an approximately triangular shape, the base of the triangle curving towards the apex (*Fig.* 2). Labially, the clear material is built out flush with the labial surfaces of the teeth, and may even be a little more pronounced, with a slightly convex surface. Palatally or lingually, it is brought out to the tongue surface of the denture. No suggestion of clear acrylic must be permitted to stray beyond the triangle and around the neck of the tooth, or the latter will be given a "floating" appearance. Rays of light striking the face of the denture are unimpeded by the clear acrylic, which thus appears a natural black "colour", of an intensity exhibited by an actual interdental space. The method, which has now been in use here for some years, may be used in all acrylic cases, including gum fit cases, although in the latter it is sometimes more difficult to allow unimpeded passage of the light rays, and it is particularly useful in many cases where the upper lip tends to be shorter than usual. The final result has a good prospect of permanence, since the overbuilding of the interdental spaces causes them to become among the most self-cleansing areas of the denture instead of stain and food traps, and any slight clouding of the material which may eventually occur does not materially lessen the effect. Porcelain or acrylic teeth may be used, although the latter require rather more care.

Where a narrow diastema is required, clear acrylic may be employed to seal the gap invisibly and prevent food packing, and possibly whistling. It is also of use when simulating toothbrush erosion and similar small defects, perhaps on an upper canine or first premolar.

METHOD

The denture is completely waxed up in the usual manner, especial care being taken to

Fig. 3.—The anterior teeth removed from the set-up and waxed together in the overbite.

contour the wax appropriately and exactly between the necks of the teeth, and a plaster overbite of the labial surfaces of the teeth, including the incisal margins, is recorded. Where the premolars are included, an overbite in two sections is needed. The teeth are then removed from the set-up and placed accurately in the overbite, which is first treated with separating medium (*Fig.* 3).

Wax is flowed between the teeth and palatally or lingually to them, sufficient to fix them together and to permit, when in due course the wax is replaced by clear acrylic, the unimpeded passage of light through the interdental spaces to the tongue surface of the denture. This block of teeth and wax is then removed from the overbite, invested in plaster, and processed in the usual manner in clear acrylic. When deflasked, the acrylic is carefully trimmed until there remains, in the interdental spaces and palatally or lingually, only the amount previously described, and this trimming may be performed with fine fissure burs and stones and small sharp instruments. It is then polished, placed in the overbite, and returned to the set-up, where it is further fitted if necessary, and waxed into position. The whole set-up is then processed. It will be noted that the impression surface of the denture receives one processing only. When finally polished and placed in the mouth, the clear material defies detection unless the convexity of the labial surface of the triangle is overemphasized, when the light rays may be refracted, giving a slight sparkling effect. This sparkle may be minimized by the addition of a speck of black copper cement powder to the acrylic mix.

The additional laboratory time required for the method described is well justified by the very natural effect achieved.

My thanks are due to the technicians whose work in this department has greatly contributed to the development of the technique.

A PRACTICAL SOLUTION TO THE PROBLEM OF THE LOOSE CONTACT

By **JOHN C. FRY,** L.D.S. R.C.S., D.D.S.

Demonstrator, National Dental Hospital

A FREQUENT complaint which brings the patient to the dental surgeon, is the impaction and lodgement of food between the teeth.

Various factors in the mouth give rise to inadequate contacts between the teeth which allow this pernicious condition to occur:—

Proximal cavities in the teeth;
Mal-alinement and position of teeth;
Rotated teeth;
Malformed teeth;
Loss of teeth;
Missing teeth;
Traumatic bite;
Loss of supporting structures of the teeth giving rise to pathological mobility.

If the condition persists for any length of time, the mechanical, chemical, and bacterial irritation from the retained debris in the proximal space will give rise to inflammation of the interdental gingival papilla, which will progress ultimately to pocket formation.

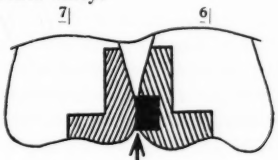
The restoration of a good contact can be achieved in many cases by placing correctly contoured proximal metal fillings. The real problem comes when it is possible for the teeth involved to drift apart again after the contact has been established in this way.

This can happen where two teeth are in contact but have no mesial or distal support in the arch, but usually where there is no distal support. This is found particularly in the upper jaw between the first and second molars when the third molar is absent; and, in the lower jaw, between the second and third molars when the second molar has tilted forward after the loss of the first molar.

A typical example of this problem is a patient who complains of irritation and bleeding of the gum between the upper first and second molars. The third molar has been lost and second molar has moved slightly distally, allowing food, especially when of a fibrous character, to be forced past the contact point during mastication.

If this contact is re-established by a filling, it is usually of only transitory benefit because the second molar will tend to drift distally once again. A permanent cure to this trouble

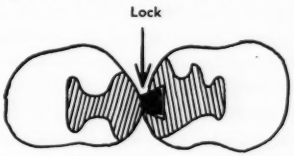
can be effected by making a mesial occlusal inlay in the second molar and a distal occlusal inlay in the first molar with a dovetail projection from one inlay, which fits into a locking slot in the other inlay.



Lateral view

The cavities for these two inlays should be prepared as for bridge abutments—that is to say, with more retention than is required for an average inlay. The most convenient method for the fabrication of the inlays is on a model made from an impression of the two teeth with their cavities taken in hydrocolloid or alginate impression material.

Although it is immaterial which inlay has the dovetail projection, it is a practical idea, though somewhat fatalistic, to have it on the second molar, so that this tooth can be extracted first.



Occlusal view

The periodontal condition of teeth so locked together is good. The patient should be instructed to use wooden points to clean the space below the projection lock.

TIME TO TAKE STOCK

By **J. P. HOWES**, L.D.S. R.C.S.

Demonstrator, National Dental Hospital

As a general dental practitioner lucky enough to do a little part-time teaching, I am sufficiently stimulated by my conscience of what I believe to be a gap in the aims and activities of the average dental practitioner, to try to express my views on paper. The function of the general practitioner in dentistry is, I suppose, the maintenance or restoration of healthy and functional mouths in his patients, in the light of the best and latest methods devised by the leaders and teachers of the profession. He is not concerned usually with research, but with preventive treatment when possible, and with restorative treatment when necessary.

I think that it is fair to say that due, first to modern dental teaching, secondly to public demand, and thirdly to the National Health Service, the younger practitioner is devoting the greater part of his surgery time to the conservation of teeth. This is very satisfactory compared with conditions in previous decades, but is it as satisfactory as it appears ? In a nutshell, why are most teeth extracted ? Is it not because the periodontal tissues are no longer functional and healthy ? Much of the time then devoted to what I may call "anti-carious" conservation is wasted, or, at best, partially wasted because "anti-paradontal disease" conservation of teeth is not generally practised. I think that most practitioners will agree with these opinions, and that there is, therefore, a gap in our aims and practice.

The remedy begins, of course, with the restoration of School Dentistry, and a wider orthodontic service, and continues with further dental education of the public and an extension of the emphasis laid upon "anti-carious" conservation by the National Health Service to the "anti-paradontal disease" conservation.

But the initial stimulus must come from the dental schools, where even now the time devoted to teaching restoration of carious teeth, or extraction and replacement of teeth, is quite disproportionate to the time given to periodontia. A revaluation is necessary; possibly the prevalent interest in that important factor of periodontal health, balanced occlusion, is leading teachers and practitioners to take stock and to begin to think along what I submit are the common-sense lines indicated.

VISUAL EDUCATION IN DENTISTRY

By **HENRY MANDIWALL**, M.B., B.S., L.D.S., F.R.P.S.

DENTAL education with the help of visual aids is very important, especially as dental education will, and should, undergo quite revolutionary changes within the near future. The broad term "dental education" as used here includes education, not only for pre- and post-graduate students of dentistry, but for the general public, to whom some of these remarks also apply.

The often quoted Chinese proverb, "A picture is worth ten thousand words", is getting out of fashion now, for a really good picture is worth "x" times more than what the proverb suggests, the value of "x" depending upon the quality of the picture and its ultimate use. Visual education should be of paramount importance, for the educationalists tell us that more than 90 per cent of what we learn passes through the eyes, and also that what we see is believed to be more authentic and impressive than what we hear.

The use of the picture as an aid in education is not new in any sense of the word, For many thousand of years it has been exceedingly important in conveying correct impressions from one to another, and we can be quite certain that the picture language was the forerunner of our modern alphabet. As the printed letter or word has become farther removed from its ancestor, the picture, it has become more and more abstract, more and more difficult for the human mind to understand fully.

A technical discussion of almost any subject before an average group is understood only by those who have had training in that field. The same discussion presented in the usual language, might become clearer and easily understandable to most of us, if a few pertinent illustrative materials were used.

It is therefore imperative that we include in our educational procedure the maximum of those things or representation of things which help in clarifying the verbal instructions.

In the future, method of teaching will help more rather than amount as in the past. The days are fast dwindling when the Professor comes and lectures to the students by reading *ad verbatim* lines from his favourite book. The lecturer now-a-days usually dispenses with his notes and gives as it were a running commentary with the visual aids which impress the mind forcefully and permanently. If we just cast back our eyes to our books we must confess that illustrations and drawings conveyed to us much more than hundreds of words. Dental knowledge can be imparted in three ways—by the lecturer, by books, and by visual aids. Photography will never entirely replace the lecturer or books, but it will materially help both of them to an extent which was never dreamt of in the past.

The extent to which these valuable aids are used, and the degree of effectiveness with which they will be employed in any teaching situation, will depend almost entirely upon the amount and the quality of the training the teacher has received. The greatest factor retarding the more extensive and the more intelligent use of visual aids is the inadequate training of teachers to make use of the materials available.

The introduction of visual materials into the modern school, on the broad scale, has enabled teachers to learn something of their use and value through experience, and a few of the more general views which have been developed are as follows:—

a. Visual material will not supplant the textbook or teacher but will supplement and increase the effectiveness of the teacher and text. Hence the term "Visual Aids".

b. Visual aids are most effective when closely correlated with the curriculum.

c. Teachers must prepare for the visual lesson in advance; they should be familiar with the visual aids before presenting them.

d. The organization and demonstration of visual materials must be such that they are

available at the precise moment when wanted by the teacher.

e. Visual aids should be excellent in quality and accurate in detail. Misinformation obtained through visual aid is inexcusable.

f. A few appropriate illustrations are better than a score of less related ones.

g. Visual aids should make accessible in the classroom that which is inaccessible otherwise.

h. No one type or class of visual aids should be used to the exclusion of others. Each has its own use and value.

The main idea is to fill the need of teachers for a systematic treatment of the relation between the concrete materials of teaching and the process of students' learning in dental schools, where teachers are confronted with the problem of arriving at the best methods of presenting instruction to pupils of various backgrounds and abilities. There is just as much danger in the overuse of visual aids as in their underuse. While concrete materials are essential in the development of various types of learning, the ends of instruction are generalization, understanding, integration, etc.

The various types of visual aids are discussed not only from the point of their functionary values, methods of use, etc., but in relation to one another and the process of learning.

Why Visual Aids in Teaching?—Verbalism may be defined as the generic term applied to the use of words without appreciation of the meaningful content of the words, or of the meaningful content of the context in which they are used. It is to eliminate this verbalism that this is written. Verbalism may assume any one of many forms. For instance if our sense or meaning is known, but if words are used in another and different sense the outcome is verbalism. In part, verbalism is the result of instruction on an abstract level—a level which makes no provision for the depth and variety of concrete experience necessary to give richness to the abstraction. The ancient maxim—the concrete precedes the abstract—has been so readily accepted as obvious, that its full significance and application to learning have been overlooked. That old dictum can be re-worded in the light of modern teaching and experience as follows—if the abstraction is to possess a richness of meaningful content, the concrete must precede the abstract in breadth, depth, and variety towards progressive stages of abstraction.

If mass instruction is to become more meaningful, visual aids must be used to enrich and vary the pupil's concrete experience.

What Then Are Visual Aids?—Most people are quick to answer—motion pictures. There is no doubt that they are valuable visual aids, but they are by no means the only aids available to the instructor, neither are they the ones most widely used in education. Nor are lantern slides visual aids. A visual aid is any picture, model, object or device which provides concrete visual experience to the student for the purpose of (1) introducing, building up, enriching, or clarifying abstract concept, (2) developing desirable attitudes, and (3) stimulating further activity on the part of the learner.

There are a number of visual aids that one can utilize in education. Quite a few arguments have arisen as to which is the best. The answer is none. Each has its place and there is a place for each, in nearly every teaching situation. In certain situations some will be found to be better than others. A combination of types are frequently desirable. One should not become super-enthusiastic about the instructional possibilities of certain visual aids.

CLASSIFICATION OF AIDS

For convenience, these various visual aids have been classified as: (*A*) Clinical materials; (*B*) Museum materials; (*C*) Motion pictures; (*D*) Still pictures; (*E*) Graphic materials. The idea behind this classification is to show progression from the most concrete to the least concrete of the visual aids.

A. CLINICAL MATERIAL

Every teacher has put his faith, and quite rightly so, in this most concrete of all visual aids. Advantages of such materials are as follows:—

1. A real live picture of the condition is presented. Deals with real things in real situations.

2. The same case can be reviewed after treatment, and the outcome noted either for better or worse.

3. One and the same complaint or disease can be studied and compared in different individuals.

4. Questions and answers are easily and freely exchanged between the student and the teacher.

Limitations.—

1. Subject for the lesson to be discussed must centre around the clinical condition present.

2. The result of treatment may not be followed by everyone present at the first chairside or bedside meeting.

3. The class must necessarily be small for all to view and take part in discussion.

4. Limited time at a clinical meeting usually hurries the teacher, with the result that one clinical condition is dealt with more satisfactorily than others during the same session.

5. For comparison, the same condition may not be readily available in another case.

B. MUSEUM MATERIAL

A group of valuable visual aids readily available to the alert teacher, includes all types of dry and wet specimens, models, and objects.

Museum material, like clinical material, deals with objects or models of objects in three spatial dimensions (length, breadth, and thickness), except that in museums these materials are removed from their natural settings and displayed in cases. The museum of the Royal College of Surgeons is an ideal institution as an aid to visual education in dentistry. The only complaint, if it can be called a complaint, is that the student has to visit the museum to study instead of at his own school, and it is hoped that in the future various schools will bring their museums up-to-date to help students to study in the same building without the inconvenience of travelling, etc. To study at a museum one visit is usually not enough, and it is hoped that some means will be devised to enrich existing school museums to enable the students to make better and greater use of materials available at their own schools.

Museums can be of the utmost value if well arranged and if looked after with minute attention to detail and kept up-to-date, with full history of cases including morbid anatomy, pathology, diagnosis, and treatment, supplemented by actual photographs from case records, radiographs, charts, etc.

Each group of specimens should provide a graphic demonstration of all aspects of a particular disease which concerns the student. The life of a student in a museum must be made as comfortable as possible. Small portable chairs and tables, with steps at frequent intervals, must be provided, and sufficient lighting be available. Labels must be easily discernible and catalogues well classified and worded.

Do not allow the school museums to become a collection of curios. The aim should be to make them a constantly growing collection of pertinent materials.

A collection of too many duplicates should be avoided as this will deaden interest.

C. MOTION PICTURES

Rather an ambiguous term, as it is not a picture of motion at all. Psychologists tell us that an image on the retina of the eye remains there approximately one twelfth of a second after the object itself may diasppear from view. This is known as "persistence of vision". If we can arrange, therefore, to remove one picture and substitute another similar picture within this period of "persistence of vision", we can see the picture with a feeling of continuity just as we do the motion picture to-day. As the speed of projection of 16 mm. movie films ranges between 16 frames per second for silent and 24 frames per second for sound films a smooth continuity of a series of still pictures placed close together is maintained thoughout the length of the film without any break between the subsequent pictures.

Celluloid in the World War II has been very extensively utilized to bring home instructions of every description to people who never dreamt of doing the sort of work which was more or less forced upon them. Now it is intended to bring before the pundits of our dental education—in school and in private

life—the value of teaching and propaganda films in the years to come. There is no medium to equal or better cine film where motion is to be demonstrated and continuity of thought to be maintained, whether teaching in schools, or spreading health propaganda to the public.

Advantages of Silent Motion Pictures.—

1. By means of slow motion, the student is given an analysis of movement, thus enabling him to study the action which would be much too rapid for the unaided eye to analyse. It is unnecessary to waste time by pointing out the various fields in which such films can be utilized—but it is impossible to pass this topic without mentioning two special fields, namely operative dentistry and surgical procedures.

2. To speed up action where necessary.

3. By use of animated drawings it can bring before any group clear representation of action which would be invisible to the unaided eye.

4. With the aid of a microscope, the motion-picture camera can be used to record and reproduce the normal or abnormal action of processes much too small to be seen by the naked eye.

5. The cine film may be used to present animated diagrams or statistical data in a way that will form an indelible impression upon the audience.

6. It may be used to provide a brief survey of broad topics.

7. With the various tricks of motion picture photography, it can be used to clarify impression covering almost any situation when motion is necessary to convey the message speedily and correctly.

Limitations.—

It would be unfair to pay all these glowing compliments to the motion picture without calling attention to some of its limitations:—

1. It is, at best, but a substitute for the actual experience.

2. The projection of motion pictures requires a more thorough darkening of the room than would be necessary for the projection of glass slides, especially for colour.

3. The cost of equipment for taking and projecting films is sometimes a deciding factor.

4. Films must be shown two or three times if any real study and analysis of the content is to be achieved.

5. Films are perishable and do not stand wear and tear like most visual aids.

6. Films are used too often as a substitute for, rather than a supplement to, other methods of presentation.

All these limitations but serve to emphasize the importance of using the motion picture only in those situations where motion is required.

A Few Words as to How to Use Silent Motion Pictures.—

1. Motion pictures should be used where they will contribute most to the understanding of the subject, i.e. to introduce the subject or to review it.

2. The picture should be used directly in connexion with the teaching of the subject to which it pertains.

3. The teacher should be completely familiar with the text of the film. Points which are not entirely clear to the teacher should be checked in advance.

4. The showing of films should, in most of the cases, follow lectures, during which certain questions will be left for the films to answer.

5. It is advisable to show each film twice.

6. Whenever possible, use the pictures in the lecture room; moving to another room to see pictures breaks the continuity and value of the lesson.

7. See that the film is well presented—without any breaks, that it is sharp and the projector working well.

Evaluation of the Motion Picture.—

1. Use motion pictures only where motion is necessary.

2. Films should not be used unless they make a definite contribution to the teaching of the subject.

Obtaining the Film.—Having decided that a film is necessary for a certain subject, how does one proceed to obtain it?

1. The ideal would be for teachers to make their own films—this requires experience and the means for production. There is nothing better than a film made by one who knows

exactly what is wanted. Such a film would be better than a commercial project, as the latter is always thinking of glamour and pecuniary matters rather than the text necessary to achieve the desired goal. Failing this, teachers should co-operate with professional bodies, and definitely ask for what is required.

2. For teaching institutions to provide a complete photographic unit, and the teacher to get the best out of that unit.

3. To have a centralized educational body, which will turn out films as required, and then distribute them to the various institutions for their use. This is a most economical way, but rather unsatisfactory, as all the teachers may not agree with the ideas and methods of a teacher as outlined in a particular film.

Those who have used visual aids in teaching, have not in the past, paid enough attention to the good use of them. Suitable projectors, screens, films, rooms, and seating accommodation, play a tremendous part in teaching with visual aids. Teachers are usually busy with their normal duties, and have no time to see everything. To get over this difficulty, it would be better to have some person fully trained and conversant with these problems, employed by teaching institutions, and plans are now in hand whereby such trained people will be available in the future.

Functions of the Instructional Motion Picture.—

1. Depiction of continuity of processes.
2. Depiction of observable and unobservable action.
3. Development of attitudes.

A few words about development of attitudes. The influence of the motion pictures on social attitudes lies in the emotion of the situation portrayed. A very good illustration is the part a dental surgeon plays in the welfare of the community at large, and his relations to social activities, as portrayed too often in the medical world about doctors. Since the development of social attitudes is to-day considered as one of the important objectives of public education, the influence of motion pictures in attaining this objective cannot be overlooked by the educationalists.

Activity is such an integral part of real life that the use of any visual aid other than the motion pictures to present concrete experience in situations in which activity is involved, results in the loss of a high degree of realism essential to effective learning. The functions of the motion picture in depicting unobservable action can be classified, as under:—

1. Animation.
2. Slow-motion photography.
3. Time-lapse photography.
4. Microphotography.
5. Miniature photography.

There is no need to go into the details of these five classes, as dental subjects are so numerous and adaptable, that only clever ingenuity is required to fit suitable subjects in these classes.

Silent films are best where different teachers are going to make use of motion pictures, in which case each teacher has the freedom of the use of his own vocabulary to furnish the verbal message to the classroom.

Sound Motion Pictures.—Certain values which are inherent in the sound motion picture make it a powerful instructional tool.

There are five such values:—

1. The inclusion of natural sound provides a close approach to subjective reality in the experience of pupils.

2. The use of sound in instructional motion pictures provides the auditory element essential in a number of subjects to which the other pictorial aids are not adapted.

3. The sound picture is particularly adaptable to any grade level or low ability group.

4. Sound motion pictures present unvarying oral explanation.

5. The sound picture directs the pupil's attention to important aspects of the film content as it is being projected.

Values of Motion Pictures in Instruction.—

1. Helps initial learning of concrete factual material.
2. Develops thought and reasoning.
3. Helps learning relationships.
4. Makes learning permanent.
5. Helps to form habits and skills.
6. Develops descriptive and explanatory responses.
7. Develops imagination and interest.

Methods of Teaching by Films.—Before giving instructions by means of films it would be advisable to carefully consider the following points:—

1. Analysis of film.
2. Evaluation.
3. Pupil preparation and motivation.
4. Methods of projection.
5. Induction of generalizations.
6. Checking information.
7. Integration with other instructional materials.

1. *Analysis of Films.*—The teacher must analyse the content of the film which will help him to put over the object of the film in a better and more comprehensive way. In other words a little study on the part of the teacher is equally important and necessary.

2. *Evaluation.*—The following elements go towards evaluating an instructional film:—

a. It must have a prime objective.

b. Titles should be evaluated in terms of the comprehension of pupils at the grade level for which the film is most useful. They should definitely contribute to the better understanding of the subject matter.

c. Scenes should be in logical and most understandable sequence. First things should be shown first.

d. Subject matter should be accurate and up to date.

e. The total probable effect of a film upon attitudes should also be considered. A film that encourages ridicule, even in a slight degree, does not deserve to be called a teaching film.

f. Quality of photography is a factor to be considered in terms of artistic composition and perspective.

3. *Preparation of the Pupil.*—Through the ordinary cinema pictures, pupils have been accustomed to view films in the light of entertainment, and therefore a competent teacher will see that a new approach is made with instructional films. Students must be prepared to view such films with a curiosity and a desire to learn new subjects with interest. Pupils must be taught what to look for, as there are relatively few things in a film which it is possible to observe amongst thousands of other things.

4. *Methods of Projection.*—(*a*) In parts; (*b*) As a whole.

An initial projection of the entire film will give the pupils an overall view of the whole subject, and will arouse interest, provoke discussions, reveal deficiencies of learning, and develop a desire to know more.

As most instructional films can be easily divided into parts or sections, it is possible to give more detailed attention to some parts through a separate projection of each of these parts, with frequent pauses to raise or answer questions. If necessary, the whole film can be projected again as a review of the subject. Do all pupils benefit equally by these films? Yes, in proportion to their intelligence, and therefore it may be necessary to show these films over and over again till the desired goal is reached.

5. *Induction of Generalizations.*—Films, like other visual aids provide concrete experience, and from these experiences, pupils should make their own interpretations and generalizations. This means that the pupils must be taught to observe carefully.

6. *Checking Pupil Observation.*—The experience derived by the pupils from seeing a film must be checked by the teacher. It will be found in some cases that erroneous notions develop; in others important materials completely escape observation. Upon the results of this checking will the numbers of future projections and repetitions depend.

7. *Integration with Other Materials.*—Films should not be used in isolation; they should be used with other materials such as museum specimens, slides, reading matter, etc.

Teacher-made Motion Pictures.—As said before, the best instructional films can be made by the teachers themselves, as they know what they want, how much they want, in what order, etc. The greatest drawback of such films is that unless the teacher has had special training in scenario writing, photography, titling, editing, and other training that goes to make a first-class film, it will defeat its own object. There is nothing more derogatory and criminal than a badly produced film to turn pupils against appreciation of good instructional films. This brings to light an

important subject—motion picture appreciation and its teaching. Recently the appreciation movement has been extended to include teaching of discrimination in the reading of newspapers and in listening to the radio. Seen in this perspective, teaching motion picture appreciation is worthy of serious consideration in education. This movement has resulted in part from a recognition of the motion picture as an art form, which has a prominent role to play in the lives of children and adults and which therefore should be cultivated in part from the general movement to raise the standards of theatrical motion pictures by elevating public tastes. Properly administered, under school control, teaching motion picture appreciation may constitute a valuable practice in the development of discrimination in pupils towards the world about them. Owing to the velocity of experience, little opportunity is allowed for detailed observation, and thus the results of film instruction tend to be impressionistic, moods are created, emotions stirred, and insight developed. But intellectual analysis of the total situation portrayed in the film does not necessarily follow. It is in providing opportunity for detailed analysis, for enduring observation and prolonged experience of a record of a situation, that a wide variety of still pictorial aids serve in the education process.

[*The second part of this article will appear in our June issue.*]

REINFORCED JACKET CROWNS

By **N. LIVINGSTONE WARD**, L.D.S., D.D.S.

London Hospital Dental School

[Presented at a meeting of the Institute of British Surgical Technicians on March 13, 1951.]

THE jacket crown is a restoration which has satisfactorily met and answered all the requirements of an artificial substitute for the crown of a natural tooth. To the patient its greatest advantage is æsthetic, for perfect reproduction of the crown both in form and colour may be obtained. Æsthetics to the dentist is not necessarily of the first importance in any branch of his work, for the biological and mechanical factors must be balanced before æsthetics are even considered. A jacket crown, however beautiful in appearance, is quite useless if it falls off after a weeks' wear. The tooth must be prepared, and the crown designed with extreme care so that anatomical function and form are correctly restored. The stresses and strains on the tooth and on the artificial crown must be taken into consideration and all problems solved if the final crown is to be a success. The jacket crown is the ideal single tooth restoration and may be used on any tooth in the mouth. Its uses may be listed as:—

1. Gross carious teeth.
2. Partially fractured crowns.
3. Badly discoloured teeth.
4. Hypoplastic teeth.
5. Peg-shaped teeth.
6. To correct teeth slightly out of alinement and articulation.
7. To improve the appearance of widely spaced anterior teeth and to restore contact points.
8. As a bridge abutment.

The materials at our disposal for this type of work are porcelain, gold, and acrylic. Porcelain is undoubtedly the best material for jacket crowns and is far superior to all others. It has the disadvantage in that it is liable to fracture under a sudden impact force when there is a difference in the amount of porcelain on either side of the tooth (*Fig.* 1). Owing to its hardness there is practically no wear on the material and regular adjustment to the bite has to be made. The technique is difficult and expensive and it is obvious that despite its great advantages it will never be universally employed. Hence the use of plastic materials as a substitute. Jackets crowns may be made of gold, but its great disadvantage is its colour when

used anteriorly. Provided that the correct gold is used it is ideal for molar restorations and as a bridge abutment. Acrylic on past experience is at best a poor substitute in the construction of a jacket crown. It is possible

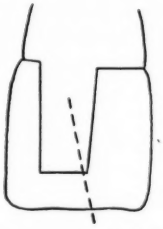


Fig. 1.—Showing uneven distribution of porcelain and possible fracture line.

that many of its disadvantages are due to the misuse of the material itself, but even this will not explain all its failures.

The object of this paper is to discuss the mechanical problems in the construction of a jacket crown, although it must be realized that these problems cannot be really divorced from the biological factors that have to be taken into consideration.

A jacket crown fundamentally will only be satisfactory if the preparation is correct. This preparation is shown in *Fig.* 2. Unless these principles are abided by, there is a danger of failure in the finished crown. However this is a text-book form and the ideal to be aimed at, and it is rare that a tooth for a jacket crown may be prepared with such exactness except where the whole crown is already present. The correct form may be aquired in some cases by cementing a gold cap onto the preparation before taking the impression for the jacket crown. Mechanical problems may still remain even after this has been done and have to be solved by designing a reinforced jacket crown. When the stresses and strains on the tooth are greater than normal—heavy bites with gross attrition; overbites in untreated Angle class II cases; anterior diastemas; rotated teeth and misplaced teeth—each case presents problems of an individual nature. A common problem is the construction of a jacket crown where the size of the finished crown will be out of proportion to the size of the tooth preparation. Many of these cases have to be treated with a gold core cemented to the tooth preparation as well as a reinforced jacket crown. The use of one of the materials mentioned by itself may

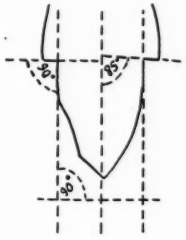


Fig. 2.—Ideal preparation for jacket crown.

not be strong enough to overcome the mechanical stresses and strains involved and it may have to be reinforced by various practical methods, to be described.

PORCELAIN

Porcelain may be reinforced by the addition of a perforated platinum gauze placed lingually and baked into the porcelain. This method is only possible if there is sufficient space between the preparation and the opposing tooth. It is

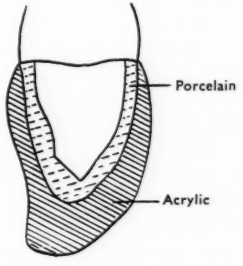


Fig. 3.—Porcelain-acrylic jacket crown.

useful in the construction of an all-porcelain bridge, when two jacket crowns are employed to carry a pontic. To overcome the possible fracture due to an impact force a method has been devised of combining porcelain and acrylic. The first stage is made in porcelain and carried to the second bake. The partially

finished biscuit porcelain (unglazed) is covered with wax and carved to the anatomical form and acrylic substituted for the wax in the normal way. The adhesion of the acrylic to the porcelain is mechanical and the construction must be prepared with care. A skilled knowledge of both porcelain and acrylic is required. The retention form is of not alter the fitting of the crown as the junction of the crown to the tooth is in gold, nor will the contact points wear down as these, too, are in gold. To reduce the chances of water absorption in the mouth the crown should never be fitted the day it is made, but should remain in water for two or three days before cementing into position. The acrylic should be packed in

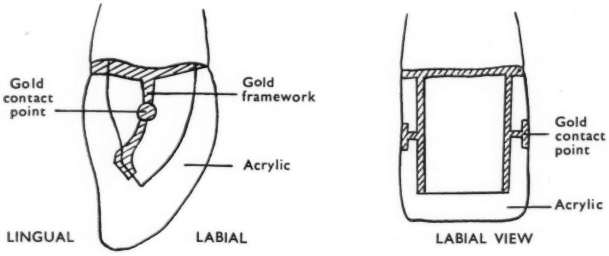


Fig. 4.—Acrylic jacket crown with gold framework.

porcelain, while the force of the bite is softened by the shock-absorber effect of the acrylic (*Fig.* 3). This method is useful in crowning upper central teeth in order to close a large diastema between the two teeth.

ACRYLIC

Owing to its inherent properties, acrylic is not a satisfactory material by itself for jacket crowns. It is an unstable material and will change its dimensions on absorbing water over a period of time. This will cause the crown to change its form, which will break the cement seal, with consequent loss of the crown; or if it stays intact, a blackening of the cement and discoloration of the crown will occur. It is too soft and wears away rapidly on the occlusal surfaces, while even polishing will remove the contact points. Numerous methods have been tried to improve this material, such as adding porcelain powder as a filler. An acrylic jacket crown is easily and perfectly reinforced with a gold framework inside (*Fig.* 4). The gold forms the collar of the crown and also the contact points. The gold if necessary may be brought out lingually so that the opposing tooth bites on gold instead of acrylic. In this manner any dimensional change will the dough state after first measuring the required quantities of polymer and monomer. There should be no excess monomer and it is not advisable to use the dry method of packing. If this method is used, which allows excess monomer to be present, the colour is usually too light, with possible greyish streaks through the crown.

GOLD

Except in posterior teeth gold is rarely used for a jacket crown unless it is combined with some other material as a facing for æsthetic reasons. Difficulty may be experienced in attaching the facing to the gold. Either the material may be processed directly to the gold or it may be premade and cemented into place in a recess made in the gold. Low-fusing porcelain may be baked onto the gold, or a high-fusing porcelain inlay cemented into place. Self-polymerizing acrylics may be used, or a silicate cement, but in these cases the whole of the tooth preparation should be covered with gold, as the material may affect the pulp of the tooth. The commonest form is to use an acrylic facing. The gold part covers the lingual, mesial, distal, and incisal surfaces, with a small layer of gold running around the

labial cervical margin. The tooth preparation is exposed labially. One method of attachment for the acrylic is to cast the gold part so that there is a hollow space between the gold

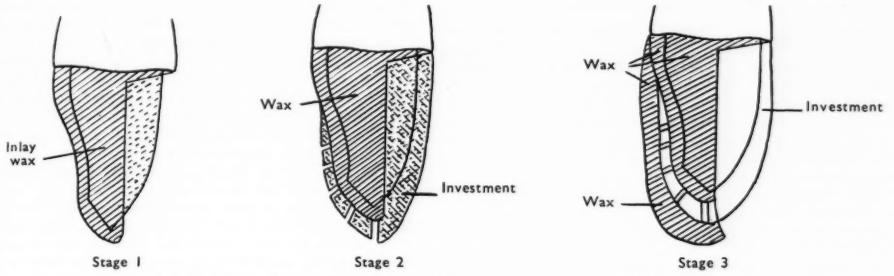


Fig. 5.—Method of attachment of gold-acrylic crown. Stage 1, Add inlay wax as shown; Stage 2, Add investment material and drill holes through investment lingually to wax; Stage 3, Complete crown with more inlay wax over investment and cast.

touching the lingual surface of the preparation of the tooth and the outer lingual surface of the gold crown. The space has small gold posts joining the two surfaces and the acrylic material is moulded over the labial surface and into this space. Its construction is shown diagrammatically in *Fig.* 5. It forms an ideal attachment of acrylic to gold with little likelihood of the two materials parting.

OTHER METHODS

In young children when a jacket preparation is indicated it is not a good policy to prepare a complete jacket crown preparation. Many fractured teeth remain alive after the trauma and may have to be nursed for many years before a precise preparation can be done. In these cases a simple form of jacket crown may be constructed with the minimum of discomfort and trauma. Only the mesial and distal surfaces are ground to remove the divergence of the tooth form. It is a collarless preparation and no attempt is made to remove any portion of the tooth save to remove undercuts. The jacket crown is made by casting a silver backing over the lingual, mesial, distal, and incisal surfaces. An acrylic facing is added after cutting and roughening the edge of the silver. The fractured tip of the tooth should be built up with wax before the crown is made, so that a space is reserved for a sedative dressing inside the crown and over the exposed dentine.

It has been assumed that all these reinforced crowns are made for teeth that are still alive, but these methods may be used for normal crowning of dead teeth. All that is necessary in the case of dead teeth is to build up a gold core in the shape of a preparation which is part of a gold post fitted into the root canal (*Fig.* 6).

The jacket crown is the height of dental art and by the solution of the bio-mechanical

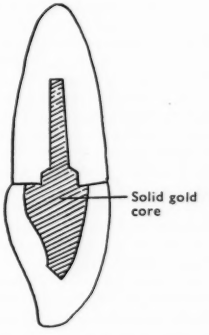


Fig. 6.—Jacket crown preparation in gold for a dead tooth.

problems a lasting restoration of beauty combined with function may be attained. In this field, too, the technician is the able ally of the dentist, and by constant co-operation, methods and techniques are advanced to enhance the professional standing of each one of us.

PARLIAMENTARY NEWS

Questions and Answers

Students from Guam

Mr. Rankin (Lab., Tradeston) asked the Secretary of State for the Colonies why 66 students of medicine and dentistry had been transferred from Guam to the Central Medical School at Suva, Fiji; what were the nationalities of the students and what was the total number of places available at the Central Medical School.

Mr. Griffiths replied: These arrangements were made to overcome difficulties resulting from the transfer of responsibility for Guam from the U.S. Navy Department to the Department of the Interior. The students accepted came from United States Trust Territories in the Pacific. Special arrangements were made to accommodate these students in addition to the normal number of students at the school. In 1949, the latest year for which information is available, there were 44 students and an additional 50 students were expected in 1950.

Mr. Rankin asked whether the Minister was aware that there was a strong local feeling that the dental and medical services for the local people had been upturned in order to accommodate the United States people, and asked whether there was any truth in that.

Mr Griffiths replied that he had had no representations. (*W., April* 4.)

Budget Debate

Presenting his Budget on Tuesday, April 10, the Chancellor of the Exchequer (Mr. Hugh Gaitskell) said the Government had decided to introduce a modest charge in respect of some dental work and optical services. He continued: "We shall leave all extractions and conservation free as at present, but we propose to charge about half the scale fee for all denture work in future, and about half the cost of each pair of glasses. There will be no charge for children's spectacles.

"Expectant and nursing mothers will continue to receive free dental treatment, including dentures from the local authority services, and children will, of course, receive free treatment in schools as now. Those for whom the charge involves hardship will receive re-imbursement, in whole or in part, from the National Assistance Board in the ordinary way. Legislation will be introduced shortly and the details of these proposals will then be further explained by the Secretary of State for Scotland and the Minister of Health. The yield of these charges is put at about £25 millions in a full year and £13 millions in 1951–2.

"The intention to make all practicable economies in administration and to impose these charges was allowed for in the Estimates already presented to the House.

"The Government naturally regret having to make these charges, but I believe the vast majority of our fellow countrymen will agree that, while it was reasonable to allow a slight increase in expenditure on health—some £7 millions above last year—it was also necessary, against the background of our general financial position, the increase in pensions that we are nevertheless providing, and the higher expenditure on the hospital service, to impose a limit and accept that some charges should be made.

"We think that in this we have struck a fair balance between one item of social service and another. The charges will not normally fall on those who are seriously ill, such as hospital patients. They apply where there is least danger of hardship and perhaps more danger of abuse than anywhere else in the Health Service."

Mr. Henderson Stewart (N.L.U., Fife, E.), speaking in the debate, said: "I heard with some interest and not a little surprise that to meet the great gap which exists between income and expenditure, the Government—not only the Chancellor—have decided, at long last, that those who benefit from some branches of the National Health Service will have to make some direct contribution.

"I am referring to those who obtain new dentures and who will now have to pay about half the price, and to those who obtain new spectacles, who will also have to pay a substantial amount of the cost. That strikes me as a reasonable and sensible thing to do, and some of us have been asking it for a long time.

"But it is not a little interesting that last week a distinguished member of the Government, no less than the Minister of Labour (Mr. Aneurin Bevan), was declaring publicly that he would not remain a member of a Government which levied precisely such a charge as this." (Members: "No.") "Oh, yes, he did, and all . . ."

Mr. Arthur Lewis (Lab., West Ham, N.): "When and where?"

Mr. Stewart: "At Bermondsey, a week ago. The hon. member knows all about it. The question I am going to ask is: Was it a real threat or was it an idle threat? If it was a real threat, then, of course, the Minister of Labour must be expected to retire from the Government. If, of course, he does not resign from the Government it means that the threat was quite idle, and that, of course, the rather terrifying picture which the right hon. gentleman has created for himself, that he is a fearsome fellow in the Government, vanishes overnight, and we shall know that the right hon. gentleman is not really worth worrying a great deal about.

"Having made that threat, and having failed to stand by his undertaking, he then relapses into the position which, of course, he should all along have occupied. But it is an interesting reflection that upon this rather important and vital matter of making ends meet so prominent a member of the Government should apparently be at such variance with other prominent members of the Government."

Dr. H. B. W. Morgan (Lab., Warrington): "The hon. gentleman is being completely unfair in talking about a speech which he has not been able to quote, and at the making of which he was not present. He has obviously not got accurate information, as I have. The statement was completely qualified by the Minister of Labour, lately Minister of Health.

"What he said was that he would not remain a member of the Government if treatment during illness was charged for. He was not referring to accessories like denture treatment or spectacles. He was referring to personal treatment at a time when a person was actually ill and in bed."

Mr. Stewart: "The hon. member has made a very gallant defence of his right hon. friend, but there is no doubt about it . . ."

Mr. William Ross (Lab., Kilmarnock) rose, and Mr. Stewart said: "Let me finish the sentence. The whole

country read at the week-end in every paper precisely what was intended, and will draw the conclusions, and so I pass from the topic."

Mr. Ross: "The hon. gentleman is not being fair in passing from that topic without making things crystal clear by quoting the exact words of the Minister of Labour."

Mr. Stewart: "I have not the exact words with me, but it does not make the slightest difference whether I have the precise words or not. I have said all that I wanted to say, and I will merely repeat that I shall be very interested to know what happens next."

Mr. John McGovern (Lab., Shettleston): "Whether or not the hon. member for Fife, East (Mr. Henderson Stewart), is accurate in the statement he attributed to the present Minister of Labour, I do not know. I did read in the Press some allusion to the Health Service, about charges; and, of course, I could not explain any more than he could what the detail of that pronouncement was.

"No doubt, in due course, the Minister of Labour can give to us the proper explanation of what was intended at that time. I think that what the hon. member said about the charges of 50 per cent for dentures and spectacles was a mistake.

"I think it is a great mistake that, for the small amount that is involved, the Health Service should be disturbed to the extent of making any charge at all. One of the things that we took tremendous credit for was that people were able to get their dentures and spectacles free.

"There is a considerable section of the community who are in poor circumstances, and this charge will bear very heavily upon them. In spite of all the difficulties, I regret that this should be carried out, and that it should have been introduced in what I regard as one of the best Budgets I have heard introduced for a number of years."

Mr. Harold Boardman (Lab., Leigh) said: "I want to say something about the proposed charges under the Health Service. I should like to make my position clear about this because as soon as it became known that it was proposed to levy a charge of 1s. on prescriptions I took up the matter with my right hon. friend, the Prime Minister.

"I cited the case of a woman with a big family, and it very often happens that the women with the biggest families live in the poorest houses, one of whose children comes home from school with a childish ailment, an ailment which, because of bad housing conditions, goes through the family like a prairie fire. I said that to charge such a woman 1s. for each prescription for her family was monstrous.

" Having made my view quite clear to my right hon. friend I then abstained from voting on the matter, because I would not give my support to that prescription charge. The point is that if we accept the charge either for dentures or for spectacles, it strikes at the very basic principle of the Health Service. I have defended the scheme on no other ground than that it allowed people to get that which their health demanded and which they would not otherwise be able to afford.

"It is already assumed that the old age pensioner can go to the Assistance Board and get the amount demanded by the dentist or the optician. But we all know that to-day there are a lot of men who are not old age pensioners who are earning £5, £6, £7, £8, £9 a week and who find it very difficult indeed to make ends meet.

"I can quite well see what will happen. Many of these men who really need treatment by the dentist or the optician will do what they did in the past, that is, go without it.

"I think that is something at which my right hon. friend the Chancellor ought to look again. I have never known a man have his teeth out when it was not necessary, although I have known people who went to the optician when it was not necessary. Some friends of mine even boasted that they had not only got one pair of glasses which they did not need, but two pairs. If we were going to levy a charge, I think it should have been done at the time the abuse was at its height, but not at the present time."

Speaking during the debate, Captain J. Baird (Lab., Wolverhampton, N.E.), a practising dentist, said there seemed to be a suggestion that the Health Service was being abused, and that by making a charge for dentures and spectacles one would stop this abuse. "There has been abuse so far as the dental side is concerned, but not from the patients, but from the dentists—a small section of dentists. I do not believe the charge, so far as dentistry is concerned, is necessary at all."

Since the beginning of this year, he said, the demand for dentures had fallen by something like 20 per cent. "So there will be that saving without a charge. If a charge is made, it will not bring in anywhere near as much money as the Chancellor suggested, for the demand for the Service is not there."

He criticized the rigid ceilings on expenditure imposed on both food subsidies and the Health Services, and added: "It is a very dangerous principle indeed to establish a ceiling for the Health Services. My principal objection is this—the charge for the Services under the Health Act is a departure, a dangerous departure, from the principle we on this side of the House have fought for for a long time indeed."

"Where is it going to end?" he asked.

Demands on the dental and optical services were dropping. But so far as other branches of the Health Services were concerned, costs were likely to go up, with the rising cost of living.

"If the costs go up, where is the next cut coming? Perhaps the Tories will be suggesting next a charge for beds in hospitals. Where is it going to end if we introduce this Bill to make a charge for certain aspects of the Health Services? This is the beginning. Once you introduce a new method of levying money it is very difficult to remove."

"Do not let anyone think by making a charge on false teeth that it is going to stop there."

"On this side of the House we have fought for this free Health Service. There have been abuses of it, but on the whole I think those interested in the Health Service—on both sides of the House—must admit it has been a much greater success than we thought it would be three or four years ago." We were now developing and producing a new race of young people who would go through life, probably, without false teeth at all.

He concluded: "I ask the Minister to think again before he introduces a Bill to force us to make this charge."

Dental Plates—Supply

Mr. Cuthbert (C., Arundel and Shoreham) asked the Minister of Health if he was aware that the long delay which occurs in supplying dental plates under the

National Health Service was driving the public to accept their dental treatment under private practice, at extra expense to themselves; and what steps he was taking to expedite the Dental Services.

Mr. Marquand, in a written reply, said: I am not aware of any delay in recent months in the provision of dentures for normal patients under the National Health Service. (*Th., April* 12.)

Mr. Emrys Hughes (Lab., S. Ayrshire) asked the Secretary of State for Scotland how many people in Scotland were supplied with dentures and spectacles last year and what was his estimate of the sum likely to be saved next year in Scotland as a result of the Budget proposals.

Miss Herbison replied: In the year to March 31 last, just over 400,000 persons were supplied with dentures and just over 750,000 with spectacles. If Parliament passes in the near future the legislation needed for the charges proposed by my right hon. friend, the saving in Scotland during the financial year now current is expected to exceed a million pounds.

Mr. Emrys Hughes: "Is there any evidence of widespread abuse of this Service?"

Miss Herbison: "I should not say that there has been widespread abuse of this Service, but there has been some abuse."

Sir Thomas Moore (U., Ayr Burghs): "Since it is obvious that the Scottish people need spectacles to see the present meat ration and dentures to eat it, is the saving justified?"

Miss Herbison did not reply.

Mr. J. Carmichael asked if old age pensioners would be subject to a means test when they applied for glasses or dentures.

Miss Herbison replied that those now receiving National Assistance—and the majority of old-age pensioners were on supplementary benefit—would still be able to get dentures without cost.

Mr. Carmichael: "If they are not on National Assistance but dependent entirely on their old-age pension or superannuation will they have to go through a means test in order to qualify?"

Miss Herbison suggested that he should read the Bill which would shortly be published. The policy was that people who could not pay because of financial circumstances would get that benefit just as they got other benefits.

National Health Service Dentists—Private Treatment

Mr. Edgar Granville (Lib., Eye) asked the Minister of Health whether, in order to eliminate misunderstandings, he will take steps to see that dentists operating under the National Health Service asked patients at the commencement of treatment whether they wished to be treated privately or under the Service.

Mr. Marquand, in a written answer, said: Patients should make clear to the dentist when applying for treatment whether they wish to be treated under the Service or privately. (*F., April* 13.)

National Health and Insurance Bills

The National Health Service Bill (to authorize charges in respect of dental and optical appliances) and the National Insurance Bill, both necessary because of proposals in the Budget, were presented and read a first time. (*T., April* 17.)

Cost of Dentures and Spectacles

Commander Noble (U., Chelsea) asked the Minister of Health what would have been the total saving if a charge for dentures and spectacles had been made from the start of the National Health Service.

Mr. Marquand replied: An exact calculation cannot be made, but I estimate that the saving in England and Wales would have been of the order of £50 million. (*Th., April* 19.)

Supply of Dentures and Spectacles to the Services

Mr. Emrys Hughes (Lab., South Ayrshire) asked the Secretary of State for War to what extent soldiers have been supplied with dentures and spectacles during recent years, and if they are affected by the new proposals for payment for these services.

Mr. Strachey replied: Since the introduction of the National Health Service soldiers have been entitled to free dentures and spectacles like other members of the population. They are also provided as necessary with Service pattern spectacles for use under a gas mask. Previously they received free dentures and Service pattern spectacles only. The subject raised in the second part of the question is at present under consideration. (*T., April* 24.)

NATIONAL HEALTH SERVICE BILL, 1951

CHARGES FOR DENTURES

THE text of the National Health Service Bill, 1951, was published on Tuesday, April 17. The Bill applies to England and Wales and to Scotland.

Dentures: Charges to Patient:—

	£	s.	d.
Full upper and lower	4	5	0
Single dentures:—			
1, 2 or 3 teeth ..	2	0	0
4 to 8 teeth ..	2	5	0
9 teeth or over ..	2	10	0

The patient will not have to pay more than £4 5s. for any denture, but if he wants a metal denture which is not clinically necessary, he will have to pay in addition to the £4 5s. the whole extra cost of the metal denture.

The charges will come into operation as soon as Regulations can be made following the passing of the Act, and they will apply to all dentures where the patient is accepted by the dentist on or after the date when the Regulations come into force and to spectacles supplied following a sight test on or after that date.

The same date will apply in the hospital service.

The charges will be paid direct by the patient to the dentist or optician under the family practitioner services (or to the hospital authorities) and the fees payable by the Executive Council to the dentist or optician will be correspondingly reduced.

The charges will *not* apply to the replacement of dentures and spectacles following loss or damage where the position will continue to be governed by the present Act. Thus a patient who has been careless will be required to pay the full cost or such proportion as the Executive Council decide, but a patient who has not contributed to the loss by carelessness will have the loss or damage made good free of charge. In the case of spectacles, however, whether there has been carelessness or not, the full cost of the spectacle frames (which is dependent on the patient's choice) will be payable.

Patients who cannot afford to pay the charges will be able to apply to the National Assistance Board for help in the ordinary way even if in full-time employment. The Board will deal with their applications on the usual Assistance standards.

The charges may be varied by an Order in Council subject to an Affirmative Resolution in both Houses of Parliament.

The Bill also empowers responsible Ministers (the Minister of Health and the Secretary of State for Scotland) to make arrangements for the treatment in other countries of patients suffering from respiratory tuberculosis. (Fuller details announced by the Secretary of State for Scotland in reply to a Question on April 10, and by the Minister of Health on April 12.)

THE XIITH CONGRESS OF THE INTERNATIONAL A.R.P.A.

A.R.P.A. Internationale (Association pour les Recherches sur les Paradentopathies) is the international society for the study of diseases of the periodontium. A congress is held biannually, to which the respective A.R.P.A. of each constituent country sends delegates.

The XIIth Congress of the International A.R.P.A. was recently held in Madrid, March 13–17, and I had the privilege of attending as the official representative of the British Society of Periodontology. There is no society in this country which is a constituent member of International A.R.P.A., and I should here like to acknowledge my gratitude to the Governing Body of International A.R.P.A. for extending an invitation to the British Society of Periodontology.

The congress was held in the School of Stomatology of the City University of Madrid, which, incidentally, is the only dental school in Spain. It is a magnificent building consisting of a main block of three stories uniting four wings of two floors each. The internal fittings are not yet completed, although the school is being used. Splendid though the building is, one was struck by the dearth of equipment, especially that of an electrical nature such as the dental unit which is found almost universally in the British Schools.

At the opening ceremony held in the Great Hall of the School the delegates were welcomed by the Dean of the Medical Faculty; each in a short speech conveyed the greetings of his respective country to those assembled.

A reception of a more informal nature was held afterwards, at which it was possible for people to renew old acquaintances, and for myself to get to know those who previously I knew only by reputation. Jaccard, Vauthier, Norberg, Thielmann, and Mühlemann, and many others, became much more than names.

The scientific part of the proceedings consisted of four sessions in which the following themes were discussed: Internal Medicine and Periodontal Diseases; Nomenclature and Pathology of Periodontal Diseases; Prophylaxis of Periodontal Diseases; and the Functional Treatment of Periodontal Diseases.

Quite the most striking feature to a British periodontist was the way in which almost all speakers presented the subject from the systemic aspect. We in this country stress

the removal of all local factors, and any systemic investigations and treatments necessary are performed concurrently, but usually by the physician, whilst the patient still remains under the care of the periodontist. Photographs of many mouths were shown in which much calculus remained and yet the patient was receiving systemic treatment. Nothing was shown, however, which would prove wrong the accepted British principle of thoroughly scaling and polishing all teeth before instituting adequate home hygiene care as almost a routine in the treatment of all periodontal conditions.

Nevertheless, it was refreshing to hear the theme of Prophylaxis discussed in the true sense of the word rather than the somewhat perverted English usage whereby it is commonly confined to the operation of scaling and polishing used not only for prophylactic purposes, but also as a therapeutic measure. Under this topic one heard Bessard of Paris recommending the use of salt as a means of stimulating salivary flow and so increasing the lavage of the oral mucosa.

Perhaps the most valuable contributions to knowledge were made under the theme of Functional Treatment of Periodontal Diseases. Jeanneret described several different forms of splints. None of these were new, and, to a British observer who has not had experience of such splints as those in which a matter of half a dozen devitalized teeth are joined together, it was disappointing that the effects of treatment by such methods over considerable periods of time were not shown.

A very fine paper was presented by Eschler, of Freiburg, in which he illustrated, by means of electromyographs of the masseter muscles recorded during sleep, the effects of treatment by means of increasing the vertical height of the masticatory apparatus. The initial recordings showed marked periodic convulsions, but with treatment these gradually decreased in severity until on an average at the end of six months they were entirely absent.

Thielemann, of Frankfurt, who is an acknowledged authority on the effects of traumatic articulation, presented a paper in which he added further to the knowledge which he has already published by correlating the axis of inclination of the incisor teeth with the condylar path.

Under the subject of nomenclature and pathology your reporter was very sorry to learn that A.R.P.A. had adopted the suffix "para" in preference to either "perio" or "paro". As the British Society of Periodontology has decided after careful analysis to adopt "perio" I was compelled to express our inability to accept such terminology. There was, however, one concept on which we are agreed—that is the extent of the periodontium (paradentium). This organ comprises the cementum, periodontal ligament, alveolar bone, and gingiva. It is the disease of this structure which is the concern of the periodontist.

In addition to the papers presented there were two sessions devoted to the showing of scientific films. These were of varying standdard from both the photographic and educational point of view. Films were shown on behalf of Orban illustrating gingivectomy by both surgical and chemical cautery methods, whilst Miller had sent one illustrating principles of partial prosthesis design.

The most interesting film was one shown by Westin, of Stockholm, in which the effects of chronic trauma on the vessels of the mesentery of a rhesus monkey were superbly illustrated. If such is the effect of long-continued articular trauma, it is easy to understand why such teeth should show marked periodontal recession and often increased mobility.

An extremely friendly atmosphere was present throughout the Congress and it was welcome to find the trials of war effectively forgotten between a very large German contingent and your British representative.

The hospitality was superb, and it is impossible to express adequately one's gratitude to the Spanish hosts for their efforts to make the Congress a success.

The next congress is to be held in Geneva in 1953, when the themes of precocious periodontal lesions, therapy by methods of reactivation, and the social aspect of periodontal treatment will be discussed.

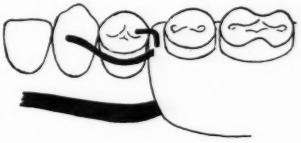
A. Bryan Wade.

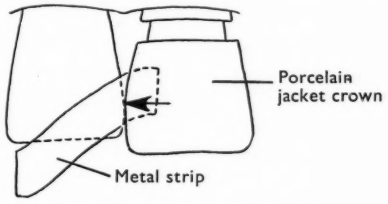
ILLUSTRATED HINTS

TO STOP BACK RISING OF DOUBLE FREE-END DENTURES

Double free-end dentures with a stainless steel lingual bar (Kennedy Class I) sometimes cause trouble because it is not easy to prevent the back rising. If the lingual arm of the clasp is made of half-round wire and extended over the cingulum of the canine, it will provide sufficient indirect retention to stabilize the denture. The end of the buccal arm should be as far distal as possible.

C. P. Wallis.





FITTING JACKET CROWNS

When a porcelain jacket crown is being tried on with the platinum foil still in position, the crown is sometimes held up by too great a contact point. This point may be difficult to find exactly, but is easily found by placing a thin metal strip between the crown and the adjacent tooth. With slight pressure a black spot will appear at the premature contact point. Actual grinding may then be done.

L. Coppes, Amsterdam.

SOCIETY NOTES

The Institute of British Surgical Technicians

The next meeting will take place at the Eastman Dental Clinic, Gray's Inn Road, W.C.1, on Tuesday, May 15, at 6.30 p.m., when Mr. Howell Richards, L.D.S., R.C.S., will again lecture on "Some Removable Orthodontic Appliances."

The June meeting will take the form of a Dental Brains Trust and will be held at Caxton Hall, Westminster, S.W.1, on Tuesday, June 19, at 6.30 p.m. Mr. Chas. B. Phillimore will be the Question Master and there will be a team of two dental surgeons, including Professor J. Osborne, and two dental technicians —Mr. E. G. Emmett and Mr. J. Boswell. Please submit your questions to the Secretary, Institute of British Surgical Technicians (Dental Section), 6, Holborn Viaduct, E.C.1.

University College Hospital Dental Society

The hospital is very short of dental text-books, the current number of volumes being twelve. In order to build up a library an appeal is made to old students to donate their old unused text-books to the Society so that they may be put to daily use.

Any contributions to the Library Fund to buy up-to-date volumes would be appreciated.

Books or donations should be sent to P. A. Browne, Hon. Secretary, Dental Society, U.C.H., Great Portland Street, W.1.

ABSTRACTS
from Other Journals

Congenital Malformations in the Teeth and Eyes in Mental Defectives

The authors report an investigation on a clinical study of various dystrophies of the teeth and eyes in mental defectives. An attempt is made to correlate the fact that these anomalies are aetiologically related with other congenital defects, and their evidence supports their views. Some 319 mental cases were examined clinically, checking the history and family history of each patient. The structural pattern of the teeth was found to be affected in 84 cases, 15 were doubtful, and 220 patients had normal teeth. The dental disorders consisted of enamel hypoplasia, malformations of shape, and microdontia. This percentage was found to be much higher than in the normal population, and among the mental defectives was found to be highest in the mongols. The association of dental disorders with lenticular defects was also highest in the mongols. As the most important associated clinical defects are in the lens, and as these are accepted as developmental, it is suggested that the same aetiological factors are acting to produce the dental lesions. The mental disorders in all the cases were prenatal in origin; other patients were excluded from the survey. It appears that the involvement of the teeth in these cases is part of a syndrome of a systemic condition. It is thought that the aetiological factors are in the ectoderm and that its inherent characteristics and its mode of development play an important part in the pathogenesis.—SPITZER, R. and MANN, IDA (1950), *J. ment. Sci.*, **96**, No. 404, 681.

Parodontose atrophique et Douche filiforme

A new treatment for periodontal disturbances is described by the authors, who have been using the method at Aix-les-Bains, France. It consists of a series of mouthwashes applied with water projected with a pressure of 4–16 lb. from an opening of 0·25–1 mm. diameter on to the gingival tissues. Three different waters are used: Thermal water containing sulphur at 40° C., thermal water containing alum at 40° C., and thermal sulphur water used cold. These waters may be used singly or as a mixture. The treatment has a stabilizing effect on periodontal tissues by scarring fibrosis and by functional stimulation. The cure is specially advocated for cases of atrophic periodontosis. Patients also have general treatment at Aix-les-Bains to re-establish the normal function of the eliminating organs, while laboratory tests are made on the blood and urine as well as normal methods of checking the results.—COUTURIER, P., and BIETH, C. H. (1951), *Schweiz. Monats. Zahnheilk.*, **61**, 117.

PREVIEW

No. 10 JUNE

BOOK REVIEWS

PSYCHOSOMATICS AND SUGGESTION THERAPY IN DENTISTRY. By JACOB STOLZENBERG. D.D.S. $8\frac{1}{2} \times 5\frac{1}{2}$ in. Pp. 152 + xii. 1951. New York: Philosophical Library Inc. $3.75.

IT is only in fairly recent times that a study has been made of the relationship between the physical and emotional factors concerned in disease. A knowledge of psychosomatic medicine brings to the practitioner a realization of the effects of emotional disturbance on bodily health and function. The author in this book brings the principles of psychosomatic medicine to dentistry and deals with the subject in a simple readable form. The reader should not lightly dismiss the impact of the mind on dental disease or of dental disease on the mind, for it can give rise to disturbing afflictions. Every dentist practises some sort of suggestion therapy on all his patients, but largely with a view to completing the treatment in comfort for the patient and himself, and not as an actual part of the treatment. The same problems occur on subsequent visits and have to be solved again and again, instead of once at the beginning of treatment. The text discusses the problems of fear and patient management and deals with the oral symptoms caused by emotional disturbances. Bruxism, thumb-sucking, nail-biting, gingivitis, and periodontal diseases are considered from the psychological point of view, and the principles of their treatment. The last chapter is devoted to hypnodontics (hypnotism in dentistry) and suggestion therapy. Hypnotism is only discussed as an adjunct to treatment and is not put forward as a solution except in very special cases. This is undoubtedly the correct attitude.

The author maintains that for successful practice the dentist must not only understand the principles of psychosomatic medicine but also understand their relationship to himself, in fact "know thyself" is his cardinal principle. The dentist who tries to understand his patients and their attitude to him will find this book full of interest and easy to read. To put it into practice will demand much more than reading; to most men in a very busy practice it would be out of the question for it requires complete freedom. Psychosomatic dentistry and hypnodontics are a new field in dentistry and much more research is required into the subject before some of the theories advanced are proven. It cannot be said that the colour photograph of a case of psycho-transient gingivitis helps in this direction.

N. L. W.

TEXTBOOK OF PERIODONTIA (ORAL MEDICINE). By SAMUEL CHARLES MILLER, D.D.S., F.A.C.D., F.A.D.M., Professor of Periodontia and Chairman of Periodontia Department, New York University College of Dentistry. With the co-operation of the Members of the Periodontia Staff and Special Contributors. Third edition. 6×9 in. Pp. 900 + xviii, with 586 illustrations, some coloured. London: Henry Kimpton. 84s.

THE third edition of this book presents a text which has been completely rewritten, so extending the volume by 167 pages. All matter which was no longer applicable has been deleted and much recent knowledge included.

New chapters on "Psychosomatic Relations in the Etiology of Periodontal Disease" and "Periodontal Disease in Children" have been added, whilst that dealing with the endocrine system has been given the title "Internal Medicine and Periodontal Disease", thus increasing its scope. An examination of the chapter index might lead one to believe that the chapter on "Presenting Periodontia to the Patient" had been omitted, but a more detailed examination reveals that this is not the case, and that this most important aspect of periodontia has, in fact, received more attention than in previous editions.

The standard of printing is extremely high and all subject matter is adequately illustrated.

There is no doubt that the subject of periodontia is very fully considered in this book, and no teacher of the subject can afford to be without it, whilst all those who wish to practise full-mouth dentistry should read it.

There is an extremely extensive glossary as well as an index of proper names and a subject index. These three items occupy 154 pages, of which 48 are given to the glossary containing many words which are not peculiar to periodontia. Deletion of this part would in no way detract from the value of the book, and would permit a reduction in price.

A. B. W.

ESSENTIALS OF ORAL SURGERY. By Vilray Papin Blair, A.M., M.D., F.A.C.S., Professor Emeritus in the School of Medicine, and Professor Emeritus of Oral Surgery in the School of Dentistry, Washington University, St. Louis; and Robert Henry Ivy, M.D., D.D.S., F.A.C.S., Professor of Plastic Surgery in the School of Medicine and Graduate School of Medicine, and Professor of Maxillofacial Surgery in the School of Dentistry, University of Pennsylvania, Philadelphia; with the collaboration of James Barrett Brown, M.D., F.A.C.S., Associate Professor of Clinical Surgery in the School of Medicine, Washington University, St. Louis. Fourth edition. 6 × 9 in. Pp. 635, with 485 illustrations. 1951. London: Henry Kimpton. 56s.

It is now twenty-eight years since the first edition of this book appeared. The new fourth edition has been awaited with interest, for the third edition, published in 1944, was reprinted in 1946 and 1947. These facts speak for themselves and prove the value of this work, both as a text-book for the student and as a reference book for the postgraduate. It is unfortunate that the price of the book, which has nearly doubled since 1944, tends to preclude its use by the student.

The new edition brings up to date the information on the use of antibiotics in the treatment of various types of infection. The chapter on cleft palate and hare-lip has been rewritten, with particular emphasis on treatment by the co-ordinated efforts of specialists in several fields. The work of Wardill, Oldfield, and Browne might well have been mentioned with advantage. The chapter on fractures of the jaws falls short of what is desirable for the oral surgeon to know, especially the intra-oral methods of fixation. Skeletal fixation by pins is extensively dealt with. It is unfortunate that several illustrations of radiographs in this chapter are not only poor but perplexing. The final chapter deals comprehensively and consisely with local and general anæsthesia, with a section on complications and their treatment.

The majority of illustrations in the book are good but some are so worn that it is hoped that in the next edition new blocks will be used. A few new illustrations have been added. This volume gives an excellent presentation of the field of oral surgery.

D. M. M.

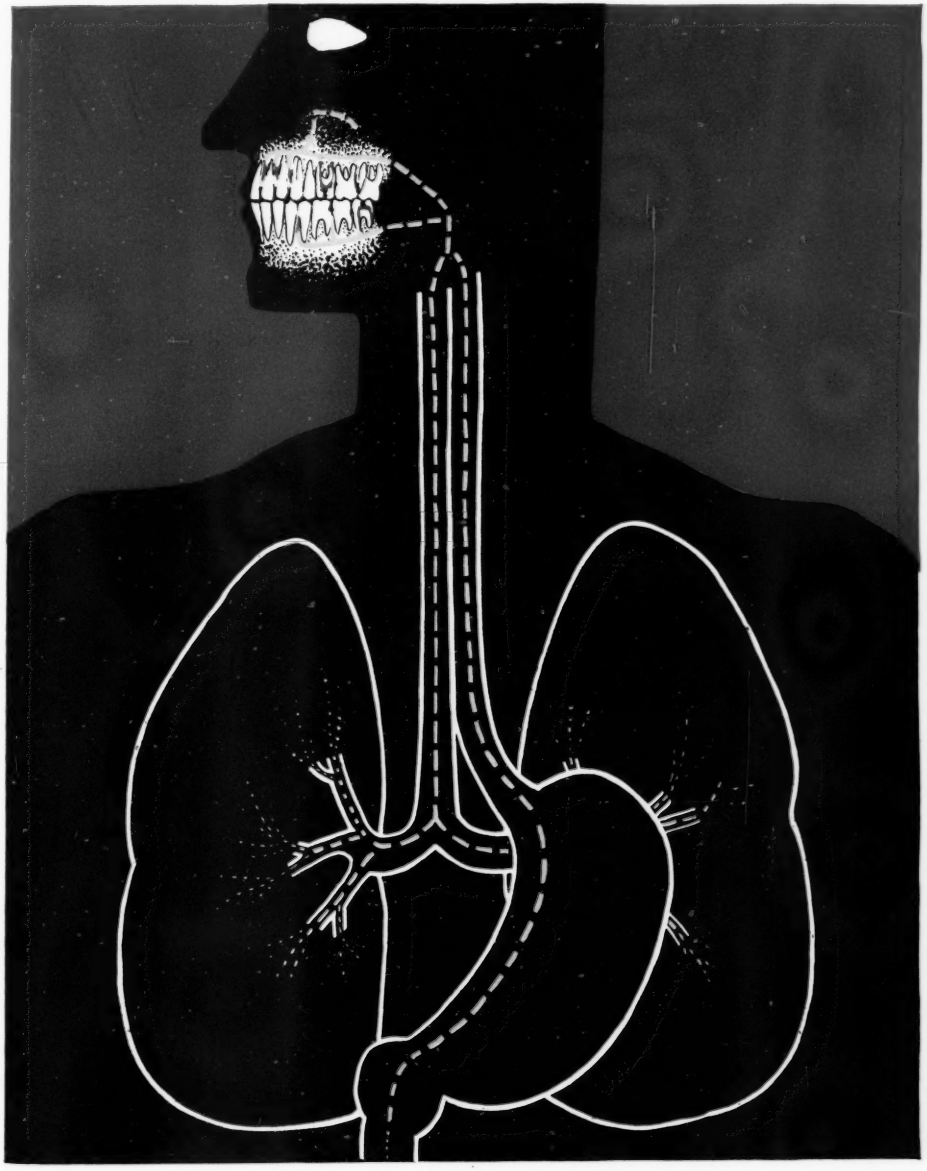
THE JOURNAL OF PROSTHETIC DENTISTRY. Bi-monthly, first issue January-March, 1951. Price $9.50. St. Louis: C. V. Mosby Co.

We welcome the first issue of a new journal published in the U.S.A. which is to specialize in prosthetic dentistry. Three eminent societies are to use the journal as their official organ of publication—The Academy of Denture Prosthetics, The American Denture Society, and The Pacific Coast Society of Prosthodontists. It is largely under the influence of these societies that this journal has been started, and its first issue is a credit to the many notable prosthetic leaders in America. The articles cover a wide range and are not by any means confined to full upper and lower dentures. It includes articles from the surgical preparation of the mouth to the psychological aspects of wearing prosthetic appliances. It is a good sign to see an article included by a technician. The journal is beautifully produced, a standard that keeps well up to the reputation of the C. V. Mosby Company. Unfortunately under modern currency exchange the annual subscription is high, but this is a factor that should not deter practitioners who wish to keep abreast of this aspect of dentistry.

N. L. W.

COLOURED CHART No. 5. (FOR YOUR PATIENT'S INSTRUCTION)

THE DANGERS OF DENTAL INFECTION



This diagram shows clearly the path of infection arising from dental tissues and causing various diseases such as neuritis, joint troubles, gastric disorders, etc.

The infection may travel through the lungs and digestive system or directly enter the blood-stream and finally settle down in a part of the body causing the organ concerned to become diseased.

It is imperative, therefore, to avoid and eliminate all kinds of dental infection at the first opportunity.

THE PROCEEDINGS OF THE BRITISH SOCIETY OF PERIODONTOLOGY

President : G. B. DE VERE GREEN, F.D.S.

Hon. Secretary : W. G. CROSS, M.S., B.D.S. Institute of Dental Surgery, Eastman Dental Hospital, Grays Inn Road, London, W.C.1

No. 2 May, 1951

Extract of the Tenth Meeting of the Society, held at King's College Hospital Dental School on Monday, March 19, 1951

Casual Communication by Mr. P. A. Trotter

Mr. Trotter, with the aid of a series of models, gave a brief and extremely interesting account of the gingival hyperplasia caused by the anti-epileptic drug Epanutin.

He discussed a case which was treated in conjunction with Mr. Knight at the University of Birmingham. The low mental condition of the patient, together with gross hyperplasia, irregular teeth, and complete lack of oral hygiene, made radical treatment necessary. One side of the mouth was treated surgically, the teeth being removed and gingivæ trimmed and sutured. On the remaining control side extractions only were performed, the irregular gingivæ being left to heal. Inspection after a period showed that both sides had healed alike and it was indeed difficult to ascertain which were the original irregular and regular wounds.

Paper by Mr. S. Cripps

Mr. Cripps, after giving an account of the different schools of thought in the treatment of the periodontal pocket, discussed the possibilities which lay in the use of the pressure pack. This method of pocket elimination had definite limitations and was intended to be an adjunct to other forms of treatment and not necessarily to replace them, but if its limitations were borne in mind it was an extremely valuable method. While scaling in a meticulous manner was of fundamental importance in periodontal treatment and its value could hardly be over-emphasized, it was nevertheless the case that there were relatively few operators with the dexterity and patience to undertake the somewhat time-consuming subgingival scaling and curettage, and the method of pressure packing might therefore be a useful supplement for the general practitioner. He emphasized that the pack, which consisted of finely shredded asbestos fibre, tannic acid, zinc oxide, and resin mixed with eugenol and perhaps almond oil, had to be mixed to a very stiff consistency, that it had to be divided into small portions and built up from the bottom of the pocket, and finally overlaid with a longer strip; the pack must be inserted from both the buccal and the lingual aspects under pressure to produce blanching. It was removed after 48 hours, when the areas were then cauterized with phenol.

After this outline of the technique, Mr. Cripps then showed a large number of lantern slides, mostly in colour, showing the conditions before and immediately after treatment with the pressure pack, and a smaller number of cases treated by other methods including gingivectomy. He raised the point that in the upper anterior region pressure packing was æsthetically often more satisfactory than gingivectomy as the gingival contour remained symmetrical and presented a pleasing line. In some cases the pressure pack and gingivectomy might be combined using the latter on the palatal aspect. At the conclusion of the paper Mr. Cripps was greeted with prolonged applause.

Mr. Cross mentioned that he had not used this type of pack for this particular purpose,

but had used a pack of a similar composition following gingivectomy and that he had sometimes found some difficulty in the removal of the pack. He also asked whether the use of phenol at the 48-hour stage was really desirable as this would tend to destroy any epithelium which was forming; furthermore, it was surely not the objective to produce unhealthy granulations.

Mr. Cripps stated that after hearing that Orban had used a cauterant in this manner, he had tried it himself and had found that healing appeared to occur quicker after its use.

Mr. Hopper made the point that the pressure pack should only be used to decompress inflammatory œdema and it was valueless where the gingival hyperplasia was a predominantly fibrous one.

In reply to Mr. Trotter, Mr. Cripps stated that the time taken to pack a quadrant of the mouth was about 45 minutes.

Mr. Roxburgh mentioned the difficulty of maintaining the pack in place where the interdental spaces were wide.

Vote of Thanks.—Mr. Hopper, in proposing the vote of thanks, said that Mr. Cripps had shown that he was a true philosopher and that he was not wedded to one form of treatment to the exclusion of others. He felt that as a result of this paper many members of the Society would be anxious to try out this form of treatment. He also wished to thank Mr. Trotter for his very interesting casual communication, and Dr. Cocker for his kindness in allowing the Society to hold its meeting at King's College Hospital.

Squadron-Leader Cloutman, in seconding the vote of thanks, said that he wished to associate himself with the remarks made by Mr. Hopper and added that it was of the greatest interest to have had a paper from such an obviously practical man as Mr. Cripps.

BOOK REVIEW

ENDODONTIA. The Clinical Pathology and Treatment of the Dental Pulp and Pulpless Teeth. By EDGAR D. COOLIDGE, B.S., M.S., D.D.S., LL.D., Emeritus Professor of Therapeutics, Preventive Dentistry, and Oral Hygiene, Chicago College of Dental Surgery, School of Dentistry, Loyola University, Chicago. $5\frac{7}{8} \times 9\frac{1}{8}$ in. Pp. 300, with 180 illustrations. 1950. London: Kimpton. 42s.

To many readers this title will be unfamiliar, but "Clinical Pathology and Treatment of the Dental Pulp and Pulpless Teeth" conveys a better idea of the subject matter. Professor Coolidge has for many years been recognized as a foremost authority in this field. His new book is a lucid account of the modern approach to the problem of the tooth the pulp of which is exposed to infection or has died as the result of infection or trauma.

The early chapters deal with therapeutic principles, the problem of dental pain, and the treatment of dentine. He stresses the fact demonstrated by Manly and others that the dentine should be regarded as an extension of the pulp and treated accordingly.

The remainder of the book is broadly divided into chapters dealing with the treatment of the vital pulp by partial or complete pulpectomy and on the treatment of infected pulps and pulpless teeth. Stress is laid on the absolute necessity for complete asepsis and meticulous care in mechanical preparation of root canals. Medication, with the pharmacological justification for the drugs used, is very well described, including a short section on antibiotic therapy.

It is safe to say that there is no more controversial subject in dentistry than the treatment of the wrongly named "dead tooth." This book shows that if the problem is approached rationally, many teeth in this category can be conserved without any threat to the patient whatsoever. All dental surgeons who practise root therapy, however infrequently, should read this book.

D. F. S.

OFFICIAL SUPPLEMENT OF THE

SURGICAL INSTRUMENT MANUFACTURERS' ASSOCIATION (INC.)

DENTAL LABORATORIES SECTION

Chairman : E. G. EMMETT, F.I.B.S.T.
Administrative Offices : 6, HOLBORN VIADUCT, LONDON, E.C.1
Telephone: CITY 6031

No. 2 May, 1951

Editorial Committee: MR. C. M. BOOTH; MR. H. J. POTTER

EDITORIAL

THE encouraging reception of our Supplement, which first appeared in the April issue of the DENTAL PRACTITIONER, has emphasized the fact that this initial effort has proved of popular interest and indicates that the decision to co-operate with this journal was well made.

It is intended in these pages to keep readers acquainted with the part the Association is playing in the present set-up in the Dental World, and through the medium of the feature "Branch News" to keep each Branch informed about the activities, achievements, and aspirations of its counterparts.

Future issues will include articles of educational interest and reports on new and useful equipment for the laboratory. To maintain this policy a contribution from YOU would help a great deal! Please remember that anything which excites *your* interest as a dental technician and a laboratory owner will also interest your colleagues. Used in this way the Supplement will earn for itself a place of value in its particular sphere.

> "Without theory, practice is but a routine born of habit. Theory alone can bring forth and develop the spirit of invention."—PASTEUR.

Rumours persist to circulate regarding some reorganization of the National Health Service, but come what may, we laboratories must continue to shoulder our responsibilities, constantly striving to improve our standards and status, and always endeavouring to make a full contribution in the National Service.

UNESCO BOOK COUPON SCHEME

One of our members who has been trying unsuccessfully for four months through a large firm of booksellers to obtain a technical book, has written to Head Office for assistance. As others may have had similar trouble, we wish to inform members of the above scheme. The United Nations Educational, Scientific and Cultural Organization have instituted a Book Coupon Scheme which is designed to facilitate the purchase of publications from abroad.

In this country, Messrs. Book Tokens Ltd., 28, Little Russell Street, London, W.C.1, are the official distributing agents, and book coupons may be purchased from them in units of dollars plus 5 per cent surcharge to cover administration costs. These coupons can be used to make direct purchase from abroad.

The use of the coupons covers among other purchases, those of books, subscriptions to periodicals and to learned societies. Members who wish to take advantage of this excellent scheme are advised to write direct to Book Tokens Ltd.

TABLE DEMONSTRATIONS

A METHOD OF PROCESSING ACRYLICS

By **H. J. POTTER**, F.I.B.S.T.

WHEN the suggestion was first made that I should take a table at the Table Demonstrations recently organized by the Dental Laboratories Section of the S.I.M.A., I confess to the feeling that such things were not for me; that there must be many among our number who, being much abler than myself, had more to offer. Reflection, however, convinced me that if I were able to present a subject for discussion some good might result if only for a few people. If it should prove that some technicians have had second thoughts I am content; in any case, the experience was most enjoyable, and I should like to thank all those who by their attention and courtesy made it so.

The subject of Dental Acrylics is to me of absorbing interest, and since it appears that the average member of our craft now spends 95 per cent of his time preparing or working upon dentures fabricated of acrylic resin, the time is ripe for a review of our knowledge. Reconsideration of accepted manipulative technique is overdue.

The introduction of this material presented us with a new conception of æsthetic values and marked in my opinion the greatest advance in our craft since the first use of porcelain teeth. I believe that even if the war situation in 1940 had not precipitated the use of acrylic on a large scale, it would by now have assumed the same importance, for I am sure that, despite its limitations, its advantages over vulcanite and other denture bases heavily outweigh them.

The greatest handicap to progressive development in the acrylic field occurred because it was not possible to study it alongside vulcanite; owing to the virtual disappearance of rubber, acrylic was accepted as a substitute, which was, I feel, distinctly unfortunate. Technicians, by reason of the swiftness of the transition from one material to the other, continued to practise to a large extent the same technique as for vulcanite; indeed, they had little option about this, for no specialized equipment was available and experience was almost nil. Because of the conditions prevailing at that time the technician had perforce to make do, and it reflects much credit upon craftsmen that the results obtained were as good as they were.

The time is now overdue for a re-examination of the position. In my own opinion acrylic is not the answer to the apprentice's dream—much more is needed than merely to press it, throw it into a bucket, and boil it. The chemical construction is an involved one, and polymerization, which is where the technician's work commences, must be understood before good results can be expected. Experience has already progressed sufficiently far to enable us to produce apparently well-fitting and beautiful dentures, but many serious operators are worried, for example, by the inexplicable tendency of some full upper dentures to fracture down the median line. We are all familiar with the patient who claims that his denture fractured whilst "he was only drinking a cup of tea", and we have all no doubt disbelieved him, being convinced that at some time before this, the denture had been dropped, or otherwise mishandled. The frequency with which we are confronted by this problem should, however, cause us to give serious consideration to it. I have myself come to be very sympathetic to the patient, as it seems to me that these dentures often break down as a result of the release of internal strains over which the patient can have little control.

At my table I endeavoured to present the technique used in my laboratory for finishing acrylic dentures, and displayed some specimens of thick sections designed to illustrate my theories. Because I believe that the best results are obtained by the least amount of manipulation, I suggest that the greatest care

should be exercised in the preparation of the mould, and to this end the utmost care should be used in modelling up, and investing. To ensure that the investment will not break down, I recommend a mixture of plaster-of-Paris and Kaffir D in equal proportions; this provides an investment strong enough to withstand necessary pressures, both in flask closure and subsequent polymerization, yet one from which the denture may be easily recovered without risk. To ensure the complete removal of wax and residual scum I find it very helpful to add a soapless detergent to the boiling-out water, and have found Quix to be best for this purpose. Quix is obtainable from any general store; I have found about a teaspoonful to 1 gallon of water sufficient, but recommend that the water must be boiling.

Having coated the mould with plaster coating solution of choice, proceed to pack, and here I insist on *using flask and mould* at room temperature. For average dentures a mix of $3\frac{1}{2}$ polymer to 1 monomer is suitable, and for heavier dentures the ratio should be 4 to 1. I feel that over-emphasis has been given to the subject of pressure needed to compress the acrylic; all that is needed in my opinion is to ensure that the mould be *completely filled*, and the flask *completely closed*. I do use strong spring clamps, but to overcome the problems of expansion and contraction, a spring clamp expandable in *all* directions would be needed. To this problem I can see no solution except to complete polymerization at a low temperature, thus keeping the movement within limits. Experience indicates that the danger lies in raising the internal temperature by exothermic reaction above 65° C., and to avoid this I have constructed and used for a considerable time, a tank which holds 30 gallons of water, heated by an immersion heater, thermostatically controlled and governed by a time switch. The volume of water prevents a too rapid rise of temperature and I find the best results are obtained if a period of three hours is allowed from cold to 65° C., which should be held for a further four hours. By this time the heat of reaction will cause no trouble and it is safe to allow the water to boil. On my tank the timing clock then operates to cut out the thermostat, and the water is brought to the boil and held there for one hour, when again the timing clock operates and current is switched off; it is an advantage to allow the maximum time for cooling. To arrange for such a long operation I like to have work ready for processing at the end of the day, and the night hours are used for this purpose.

A large tank such as I have described has the additional advantage of allowing my technicians to prepare a considerable number of dentures, to process at the same time, and to be sure that conditions are carefully controlled. I am increasingly confident that the secret of success is to be found in the complete conversion of monomer to polymer before the temperature reaches beyond 65° C.; subsequent boiling is necessary, I understand, to ensure a sufficient degree of tensile strength. Another reason I keep the temperature low initially is because owing to exothermic reaction the temperature rise will be greatest in the centre of the flask, and there will be a surge of temperature above that point in this area.

It follows that when this condition prevails there will be a loss of heat *from* the acrylic dough, through the investment and flask *to* the water-bath—in fact, the application of heat will be reversed and contraction will occur in this part. Although porosity may not be apparent, there will nevertheless remain the risk of internal strain which at some subsequent time may lead to a fractured denture, with its consequent embarrassment to both patient and dentist. It is known that upon polymerization monomer contracts, and this I believe accounts for the sad results sometimes experienced when porcelain teeth are used in combination with acrylic denture base, and also makes the use of metal inserts undesirable.

In conclusion, may I ask any reader who disagrees with me, and I have no doubt there may be many, to write and state his point of view. Only by this exchange of ideas among technicians who are using the material daily will solid progress be achieved.

NEWS FROM HEAD OFFICE

A MEETING of the Main Committee was held at 6, Holborn Viaduct, London, E.C.1, on Thursday, March 8.

The Chairman welcomed and introduced the new members of the Committee elected at the Annual General Meeting and those appointed by the Branches.

Mr. Emmett was re-elected Chairman and thanked the members for their confidence in him and also expressed his appreciation of the zeal those members showed in attending meetings. This was especially so of the provincial members, who in order to attend are prepared to spend two successive nights in travelling to and from London in addition to the day at our meetings. It was a contribution about which the average member of D.L.S. did not know.

Mr. A. J. Grant was re-elected Vice-Chairman and also the Section representative on the Council of Management of S.I.M.A.

The following were some of the items discussed:—

Branch Rules and Constitutions.—It was decided that to regularize the conduct of Branches, a model constitution and set of rules should be formulated by our Legal Department and submitted to the Branches for consideration so that all can be conducted on similar lines, provision being made for taking appropriate disciplinary action where necessary.

"*Dental Practitioner*" *Supplement.* — Mr. Booth reported on the conversations which had transpired and the progress made in bringing the A.G.M. resolution into being. Mr. Grant proposed that an Editorial Committee be appointed and Mr. C. M. Booth and Mr. H. J. Potter were elected to this office.

Advertising.—Some discussion ensued with regard to the contribution which was agreed at the A.G.M. and the Committee considered that this should be used strictly for educational and advertising purposes. It was further agreed that before making applications for a grant from the fund, Branches should indicate precisely the type of activity upon which they were proposing to embark and the arrangements for carrying it into effect.

Deferment of Call-up.—With regard to the calling-up of apprentices before they could take the City and Guilds final examination, we were informed that if the examination was reasonably near the date of call-up, it was nearly always possible to secure deferment until after the examination.

The Chairman referred to a note in the minutes of the N.J.C. Education Advisory Committee on a case where an apprentice called up to the Forces was given leave to enable him to take the City and Guilds examination. It appeared, however, that this was at the discretion of the Commanding Officer.

Constitution for Local Joint Training Committees.—The Committee expressed the view that S.I.M.A. should have equal representation with the Trade Unions and the Dentists on local Joint Training Committees, and that if this could be accomplished it would result in an improvement in the educational facilities available to dental technicians.

Standard of Work.—Considerable anxiety is felt in regard to some of the materials available to us, and in this connexion meetings have taken place with the Ministry of Health and the British Dental Association. Nothing definite has yet resulted, but we are hoping that further consultations may lead to desirable improvements. Recognizing the importance of this matter, this Association is in communication with the British Standards Institution with a view to collaborating and the results of negotiations will be published.

Applications for Membership.—The following applications for membership have been recommended to the Council for election as members:—

FULL MEMBERS

Chappi & Sinden, "Thornbury", Elmfield Road, Bromley, Kent.

Page & Joyce, 24, Hyde Street, Winchester.

L. D. Aldridge, 23, Leyborne Park, Kew Gardens, Surrey.

AFFILIATED MEMBERS

James McLachlan, 239, Caledonian Road, Wishaw, Lanarkshire.

C. T. Hider, 1, Bay View, Preston, Paignton, S. Devon.

Change of Environment.—Many of our older associates will remember Mr. C. R. Mann, L.I.B.S.T., and the classical work he did in his one-man laboratory in the West End of London. With the change that has recently come over the profession, he has decided to close his own laboratory and now is in the employ of the Somerset County Council as their Senior Technician at their Taunton laboratories. All members will join in wishing him every success in this new venture and sphere of activities.

One-day Summer Conference, July 7.—Arrangements are well in hand for this Saturday Conference which is to be held at the Holborn Restaurant, London, W.C.1, and is to be part of this Branch's contribution to the Festival of Britain. The full programme will be published in the June issue of the Supplement. It is proposed, however, to commence with an assembly for conversation and luncheon as a prelude to the actual conference. This will enable members to get together informally and to renew acquaintanceships formed at the Annual Conference.

Following on this, Mr. R. Mather will give a lecture on "Laboratory Costings". Mr. Mather is the Principal of the well-known Minerva Laboratories at Cardiff, and it is anticipated that the subject of his lecture will prove of considerable interest and benefit to both experienced and inexperienced laboratory owners.

Another lecture, entitled "Laboratory Organizations", is also scheduled, with Mr. C. M. Booth as the speaker.

The day will be socially concluded with a Dinner for members and male guests only, at a charge of 15s. each.

Members are urged to keep this date open and make every effort to attend. Full details concerning the programme and applications for tickets will be displayed in the June issue.

Annual Conference Week-end, 1952.—It has been arranged to hold the next Annual Conference Week-end on Feb. 8–9 with the Holborn Restaurant, London, W.C.1, as the venue. Reservations have been made for the Annual Dinner and Dance to be held in the Grill Restaurant on Friday, Feb. 8, and as this provides larger accommodation, it is hoped that the attendance will even surpass that of this year.

Saturday, Feb. 9, will see the A.G.M. in the morning and the afternoon will be devoted to technical demonstrations.

IS THIS WHAT YOU ARE LOOKING FOR?

Having been troubled with a spate of broken wrist springs on the flexible armpieces, it was with considerable pleasure that we found a new piece of equipment introduced that frees us from this trouble.

This is in the form of a combined cord-drive laboratory motor and grinding lathe. It has been laboratory tested and is fitted with two speeds of approximately 2000 and 4000 r.p.m. The power is constant under all pressure, and can be used as a cord-drive handpiece, or, as it is fitted with a cut-out lever to disengage the cord, it can be used as a grinding lathe. A handle is fitted to the dome to facilitate easy transportation about the laboratory, thereby reducing the necessity of having frequently to move from the bench.

After extensive use in a professional laboratory this machine has proved most satisfactory both in performance and utility value; the very quiet motor is an additional feature of an efficient piece of laboratory equipment.

Particulars of this equipment may be obtained on application to the Secretary, S.I.M.A., 6, Holborn Viaduct, E.C.1.

"How quickly nature falls into revolt when gold becomes her object."—*Henry IV.*

GREETINGS FROM THE UNITED STATES

We are very pleased to have received from the United States the congratulations and best wishes for the success of our Supplement from the *Dental Laboratory Review* and also their kind permission to reproduce and reprint any material from their journal that we think will be of interest and benefit to our members and readers. We hope to be able to keep members informed of any technical developments and hints, and also as a matter of mutual interest, the problems that face our colleagues overseas and how they tackle them.

NEWS FROM THE BRANCHES

Croydon Branch Study Group report a successful meeting on March 30, when Mr. L. T. Bull gave a very interesting and instructive talk on "Removable Orthodontic Appliances". The meeting was well attended and the audience showed their interest was sincere by the number of questions they asked.

Birmingham and District Branch have appointed Mr. P. G. Dodson, F.I.B.S.T. to be the correspondent responsible for keeping the Editorial Committee informed of the Branch activities.

On Feb. 28, Mr. Burgoing, of Messrs. Davis, Schottlander & Davis, gave an interesting demonstration and talk on "Croform Chrome Cobalt Technique", there being a good attendance of laboratory owners, who were allowed to invite one of their technicians as guests. The whole of the technique could not be staged owing to the size of the equipment, but for all that the audience were most intrigued in the procedure and many questions were put to the lecturer. A number of specimen dentures were exhibited and aroused admiration for their fine finish.

A visit to the Regional Plastic Surgery Centre at Wordsley Hospital is booked for Saturday, Oct. 27, through the kindness of Mr. J. S. Knight, B.D.S., H.D.D.

All the Branch members who attended the Annual Conference Week-end are loud in their praise of the interesting subjects and the excellent way the Table Demonstrations were presented, and look forward to participating in future technical demonstrations of a similar nature.

Proposed South-western Counties Branch.—A provisional committee with Mr. C. A. Bricknell, of Exeter, as Chairman, Mr. L. H. Tilbury, of Tavistock, as Treasurer, and Mr. W. H. Horn, of Exmouth, as Secretary, has been appointed to hold office for the next six months and further meetings are being arranged.

S.I.M.A. (DENTAL LABORATORIES SECTION) DIARY

Birmingham and District Branch (*Secretary*: Mr. G. C. Taylor, F.I.B.S.T.).—At the end of May, at the Y.M.C.A., Dale End, Birmingham.

London Regional Branch (*Secretary*: Mr. R. Foale, F.I.B.S.T.).—July 7, One Day Conference, Holborn Restaurant.

Croydon Branch (*Secretary*: Mr. H. J. Nowers, F.I.B.S.T.).—May 27, at the "Six Bells", Handcroft Road, Croydon.

Main Committee.—Thursday, May 10, 10.30 a.m., at 6, Holborn Viaduct.